



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/511,475

10/15/2004

Akimitsu Tsuda

JP02 0011 US

4726

24738

7590

06/08/2006

PHILIPS ELECTRONICS NORTH AMERICA CORPORATION
INTELLECTUAL PROPERTY & STANDARDS
1109 MCKAY DRIVE, M/S-41SJ
SAN JOSE, CA 95131

EXAMINER

HAN, JASON

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/511,475	Applicant(s) TSUDA ET AL.	
	Examiner Jason M. Han	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20041015</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: pair of flat slopes 1m, 1n [Page 14, Line 29]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:
 - a. Page 3, Line 6: Grammatical error – period missing at the end of the sentence;
 - b. Page 10, Line 5: Grammatical error – end parenthesis missing;
 - c. Page 10, Line 17: Grammatical error – redundant "in which";

Art Unit: 2875

- d. Page 14, Line 10: Grammatical error – “One of features”;

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 5-6 and 15-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-2 and 5-7 of copending Application No. 10/514,419. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications commonly recite the same structural limitations as shown in the claim comparison table below, with the exception that the latter application does not specifically teach the polarizing section having a polarizing axis parallel with a direction of electric vector's vibration of an s-polarized light component of a reflecting light ray caused in the reflecting prism face

Art Unit: 2875

by an incident light ray in a predetermined propagation direction. However, it is considered obvious that one ordinarily skilled could provide either said s-polarized light or a p-polarized light component to be the direction parallel with the polarizing axis of said polarizing section.

Present Application: 10/511,475	Co-Pending Application: 10/514,419
Claim 5	Claims 1, 2, 5
Claim 6	Claims 6-7
Claims 15-16	Claims 1, 6, 7

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant recites the limitation, "the prism body section is formed on the polarizing section", which lacks antecedent basis. It remains unclear and indefinite how the prism body section of the side light section, which has been defined adjacent an input face of the light guide plate, could be on the polarizing section of said light guide plate, which has been defined on the exit face. At present, the best-deemed interpretation was applied in the prior art rejection below.

Art Unit: 2875

The following rejected claims have been construed in light of the specification, but rendered the broadest interpretation as stated by the Applicant within the context of the claim language [MPEP 2111].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Masuda et al. (U.S. Patent 6340999 B1).

7. With regards to Claim 1, Masuda discloses a surface illumination device including:

- A light guide plate [Figure 9: (3)] that has a reflecting prism face and a light exit face opposite to the prism face for propagating incident light inside the plate and reflecting the light at the reflecting prism face to output the light from the light exit face; and
- A polarizing plate [Figure 9: (4)] provided on the light exit face; and
- An anti-reflection film [Figure 9: (8)] provided on the polarizing plate.

8. With regards to Claim 2, Masuda discloses the reflecting prism face extending so that a direction of the electric vector's vibration of an s-polarized light component of a reflecting light ray caused by an incident light ray in a predetermined propagation

Art Unit: 2875

direction would inherently be in parallel with a polarization axis of the polarizing plate, whereby a portion of the illumination would pass through said polarizing plate as shown in Figure 9.

9. With regards to Claim 12, Masuda discloses the light exit face [Figure 9: adjacent (10)] facing a display face [Figure 9: (5)] of the display device.

10. Claims 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Masuda et al. (U.S. Patent 6340999 B1).

Masuda discloses a surface illumination device including:

- A light guide plate [Figure 9: (3)] that has a reflecting prism face and a light exit face opposite to the prism face for propagating incident light inside the plate and reflecting the light at the reflecting prism face to output the light from the light exit face; and
- A polarizing plate [Figure 9: (4)] provided opposite to the light exit face, whereby the reflecting prism face extends so that a direction of electric vector's vibration of an s-polarized light component of a reflecting light ray caused by an incident light ray in a predetermined propagation direction is in parallel with a polarization axis of the polarizing plate (whereby a portion of the illumination containing the s-polarized light component would pass through said polarizing plate as shown in Figure 9).

11. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Taira et al. (U.S. Patent 5712694).

Taira discloses a surface illumination device including:

Art Unit: 2875

- A light guide plate [Figure 31: (2611)] that has a reflecting prism face and a light exit face opposite to the prism face for propagating incident light inside the plate and reflecting the light at the reflecting prism face to output the light from the light exit face; and
- A side light section [Figure 31: (2605-2606, 2608-2609, 2614)] for introducing the light into an end face of the light guide plate, characterized in that:
 - = The side light section includes a light emission section [Figure 31; (2605)] and a polarizing section [Figure 31: (2609)] for polarizing the light emitted by the light emission section, and is arranged so that the polarized light component is introduced into an end face of the light guide plate; and
 - = The polarizing section having a polarizing axis parallel with a direction of electric vector's vibration of an s-polarized light component of a reflecting light ray caused in the reflecting prism face by an incident light ray in a predetermined propagation direction [Figure 31; Column 21, Lines 13-16].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2875

12. Claims 4, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (U.S. Patent 6340999 B1) as applied to Claim 2 above, and further in view of Okawa (JP 11231320 A).

13. With regards to Claim 9, Masuda discloses the claimed invention as cited above, but does not specifically teach the illumination device including:

- A side light section having a light emission section and a light guide body section for propagating the light emitted by the light emission section to widely introduce it into an end face of the light guide plate; and
- Un-divergence means for reducing a degree of divergence of light incident on an end face of the light guide plate, whereby the un-divergence means including a prism body section, that is formed integral with the light guide plate (re: Claim 9) or the light guide body section (re: Claim 11), and arranged to cause the light to be incident on the light guide plate in such a manner that the incident light ray in the predetermined propagation direction comes into the reflecting prism face (re: Claim 4).

Okawa teaches a spot light emission source with pillar-shaped light guide including:

- A side light section [Drawing 3: (12)] having a light emission section [Drawing 3: (16A)] and a light guide body section [Drawing 3: (L)] for propagating the light emitted by the light emission section to widely introduce it into an end face of a light guide plate [Drawing 3: (11)]; and

Art Unit: 2875

- Un-divergence means [Drawing 3: (11A, 18A, 18B)] for reducing a degree of divergence of light incident on an end face of the light guide plate, whereby the un-divergence means includes a prism body section, that is formed integral with the light guide plate [Drawing 3] or the light guide body section [Drawing 12: (C)], and arranged to cause the light to be incident on the light guide plate in such a manner that the incident light ray in the predetermined propagation direction comes into contact with a reflecting face of the light guide plate.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the illumination device of Masuda to incorporate the spot light emission source with pillar-shaped light guide of Okawa, in order to provide a linear light source which lights up an object surface so that its luminance distribution is symmetrical with respect to the length of the linear light source. Spot light sources are generally LEDs, as taught by Okawa, which are powerful, inexpensive, and allow for manufacturing of a smaller, lighter, and efficient illumination device.

14. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (U.S. Patent 6340999 B1).

Masuda discloses the claimed invention as cited above, but does not specifically teach the predetermined propagation direction being a propagation direction in which the incident light ray can make a plane of incidence that is perpendicular to the reflecting prism face and the light exit face (re: Claim 7); nor teaches a plurality of swath-shaped faces being used for the reflective film, whereby the predetermined

Art Unit: 2875

propagation direction is a direction along a plane perpendicular to a longitudinal direction of the swath-shaped face (re: Claim 8).

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to alternate the reflecting prism shape, in order to provide a desired illuminating effect, and thus, increase efficiency of said device. It has been held to be within the general skill of a worker that mere change of form or shape of an invention involves only routine skill in the art. *Span-Deck Inc. c. Fab-Con, Inc.* (CA 8, 1982) 215USPQ 835.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (U.S. Patent 6340999 B1) in view of Okawa (JP 11231320 A) as applied to Claim 4 above, and further in view of Maeda et al. (U.S. Patent 7021812 B2).

Masuda in view of Okawa discloses the claimed invention as cited above, but does not specifically teach the prism body section being formed on the polarizing section.

Maeda teaches a lighting device for a liquid crystal display including a side light section [Figure 3: (50)] with a polarizer [Figure 3: (20)] adjacent thereto.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the side light section of Masuda in view of Okawa (e.g., Drawing 12) such that the prism body section is formed on a polarizing section, and thus, further optimize and efficiently utilize the illumination along a specific direction or orientation.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (U.S. Patent 6340999 B1) as applied to Claim 12 above, and further in view of Umemoto et al. (U.S. Patent 6366409 B2).

Masuda discloses the claimed invention as cited above, but does not specifically teach the display device having a second polarizing plate provided to face the light exit face, whereby the reflecting prism face extends so that a direction of electric vector vibration of an s-polarized light component of a reflecting light ray caused by an incident light ray in the predetermined direction is also in parallel with a polarization axis of the second polarizing plate.

Umemoto teaches a display device having first and second polarizing plates [Figure 3: (31, 33)] to face a light exit face of a light guide plate [Figure 1: (11)].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the surface illumination device of Masuda to incorporate the second polarizing plate of Umemoto, whereby the reflecting prism face would obviously extend so that a direction of electric vector vibration of an s-polarized light component of at least one of the reflecting light rays caused by an incident light ray in a predetermined direction would be in parallel with a polarization axis of the second polarizing plate, and thus, further optimize and efficiently utilize the illumination along a specific direction or orientation.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (U.S. Patent 6340999 B1).

Masuda discloses the claimed invention as cited above. In addition, Masuda teaches in a differing embodiment the display device including a liquid crystal cell for performing optical modulation in accordance with an image to be displayed [Figure 3: (15)], whereby the polarizing plate [Figure 3: (14)] is carried on the liquid crystal cell.

It is obvious that one ordinarily skilled at the time of invention could modify the surface illumination device of Masuda to incorporate the polarizing plate onto the liquid crystal cell, in order to further optimize and efficiently utilize the illumination along a specific direction or orientation, whereby it has been held that rearranging parts of an invention involves only routine skill in the art. In this case, one would simply rearrange the polarizing plate to be carried by the liquid crystal cell. *In re Japiske*, 86 USPQ 70.

18. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taira et al. (U.S. Patent 5712694) as applied to Claim 5 above, and further in view of Okawa (JP 11231320 A).

Taira discloses the claimed invention as cited above, but does not specifically teach the side light section including a light guide body section for propagating the light emitted by the light emission section to widely introduce it into an end face of the light guide plate; the surface illumination device further including un-divergence means for causing a degree of divergence of the light incident on an end face of the light guide plate to be reduced; and the un-divergence means including a prism body section arranged to make light to enter the light guide plate in such a manner that the incident light ray in the predetermined propagation direction is introduced into the reflecting prism face.

Okawa teaches a spot light emission source with pillar-shaped light guide including:

- A side light section [Drawing 3: (12)] having a light emission section [Drawing 3: (16A)] and a light guide body section [Drawing 3: (L)] for propagating the light emitted by the light emission section to widely introduce it into an end face of a light guide plate [Drawing 3: (11)]; and
- Un-divergence means [Drawing 3: (11A, 18A, 18B)] for reducing a degree of divergence of light incident on an end face of the light guide plate, whereby the un-divergence means includes a prism body section, that is formed integral with the light guide plate [Drawing 3] or the light guide body section [Drawing 12: (C)], and arranged to cause the light to be incident on the light guide plate in such a manner that the incident light ray in the predetermined propagation direction comes into contact with a reflecting face of the light guide plate.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the illumination device of Taira to incorporate the spot light emission source with pillar-shaped light guide of Okawa, in order to provide a linear light source which lights up an object surface so that its luminance distribution is symmetrical with respect to the length of the linear light source. Spot light sources are generally LEDs, as taught by Okawa, which are powerful, inexpensive, and allow for manufacturing of a smaller, lighter, and efficient illumination device.

Art Unit: 2875

19. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al. (JP 2001-243822 A).

20. With regards to Claim 15, Shinohara discloses a surface illumination including:

- A light guide plate [Drawing 44: (44)] that has a reflecting prism face [Drawing 44: (46)] and a light exit face [Drawing 42] opposite to the prism face for propagating incident light inside the plate and reflecting the light at the reflecting prism face to output the light from the light exit face; and a side light section [Drawing 44: (45, 48)] for making light to be incident on an end face [Drawing 42: (44a)] of the light guide plate, wherein
- The side light section includes a light emission section [Drawing 44: (48)], a light guide body section [Drawing 44: (45)] for propagating the light emitted by the light emission section to widely introduce it into the end face of the light guide plate, and an un-divergence means [Drawing 44: (50)] for causing a degree of divergence of the light incident on the end face of the light guide plate to be reduced,
- The un-divergence means including a prism body section [Drawing 44: (50)].

Shinohara does not specifically teach the prism body section being integral with the light guide body section. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the prism body integral with the light guide body section to simplify manufacturing via eliminating multiple components/elements and consolidating through a monolithic device. It has been held that forming in one piece an article which has formerly been formed in two

pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

21. With regards to Claim 16, Shinohara discloses the claimed invention as cited above. In addition, Shinohara teaches the light guide body section having a light exit face faced toward an end face of the light guide plate and a light reflective face [Drawing 53: (49)] opposed to the exit face, whereby the prism body section is formed by projections and depressions of the light exit face [Drawing 44: (50)].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2875

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason M Han
Examiner
Art Unit 2875

JMH (6/2/2006)



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800